

Results of the 2004 Fall Walleye Index Netting (FWIN) Surveys

Sprague Lake, Scooteney Reservoir, Moses Lake, Potholes Reservoir, Banks Lake, Lake Roosevelt

Walleye (*Sander vitreus*) have become one of the most popular sport fish in Washington and continue to grow steadily in popularity. Although they inhabit only about twelve lakes in eastern Washington they also occupy the entire mainstem of the Columbia River from the Canadian border to near the mouth at the Pacific Ocean.

In general, due to favorable conditions, Washington's walleye populations grow faster and establish higher relative abundances than the average conditions in other areas of North America that walleye inhabit. Because of the walleye's importance as a renewable recreational resource, WDFW began the FWIN surveys in 2001 in order to manage them more efficiently and effectively. Six waters were sampled in 2004 (figure 1).

All the data collected during the fall walleye surveys was obtained by using the standardized Ontario FWIN protocol. This standardized sampling method allows valid comparisons of results from water to water and year to year. During the fall, walleye are more evenly distributed throughout the lake and the water column providing the most consistently good time to obtain a representative sample of the population. Sampling begins when surface water temperature lowers to 15°C and must stop when it reaches 10°C. The walleye were collected with gillnets only. The nets are 60m in length by 1.8m in depth. Each net contains eight panels of increasing mesh size from 25mm to 152mm (stretched mesh). Each net was set in a randomly selected site for approximately 24 hours. In order to make effort comparable, the number of net sets was determined by the surface area of the water being sampled. Each walleye captured was sampled for total length, round weight, visceral fat weight, and gonad weight. Sex and sexual maturity were determined by examination of the gonads. Otoliths were taken from each fish for age analysis.

The results from our 2004 surveys are shown in this report in the form of graphs followed by a brief explanation of each. The information displayed herein includes relative abundance (the average number of fish per net), size distribution (the percentage of walleye in each size category), age distribution (the percentage of each age group), and species composition (the percentage of each different species in the fish community for each lake). A more detailed report of our FWIN results from 2002-2004 will be forthcoming.

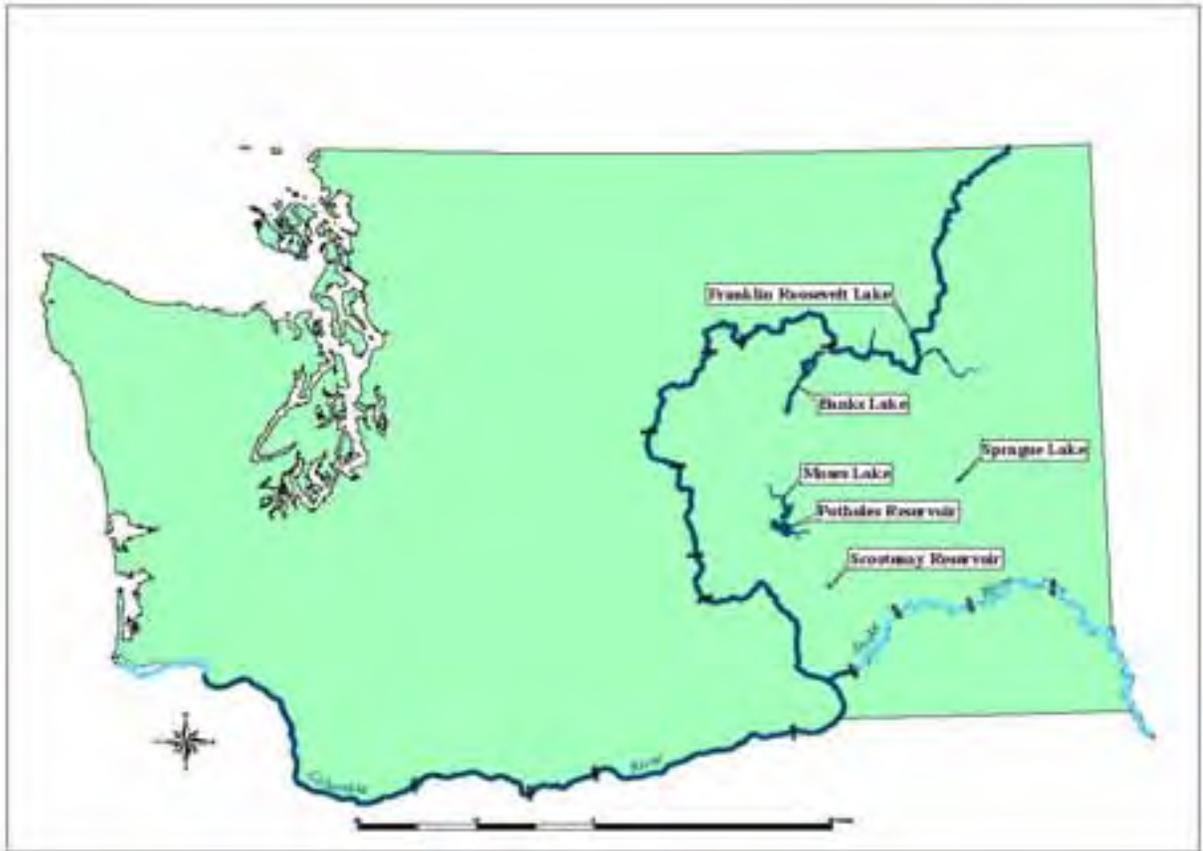
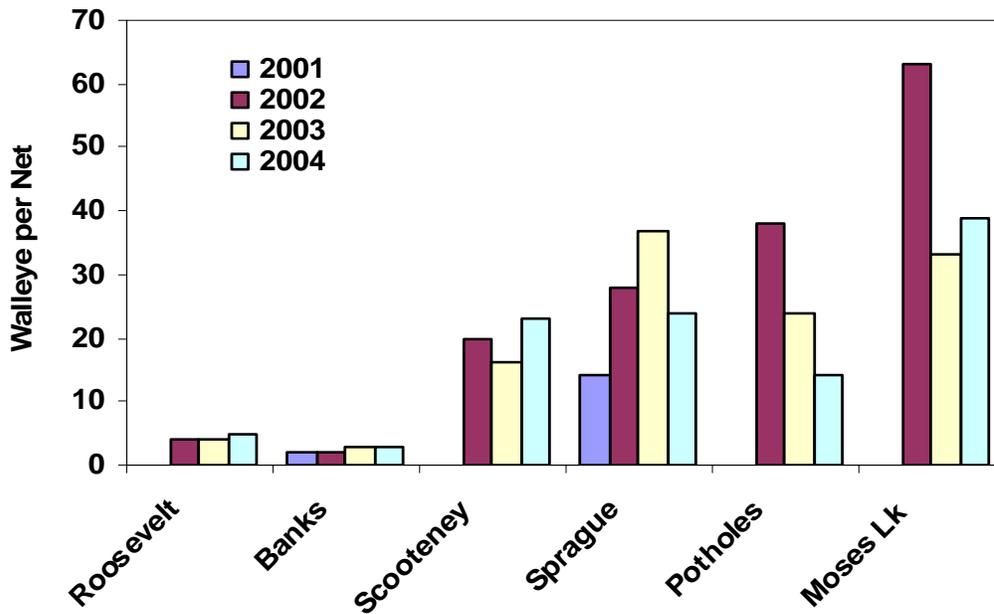


Figure 1. Map showing the six Washington waters sampled for walleye in 2002-2004 using the FWIN standard method.

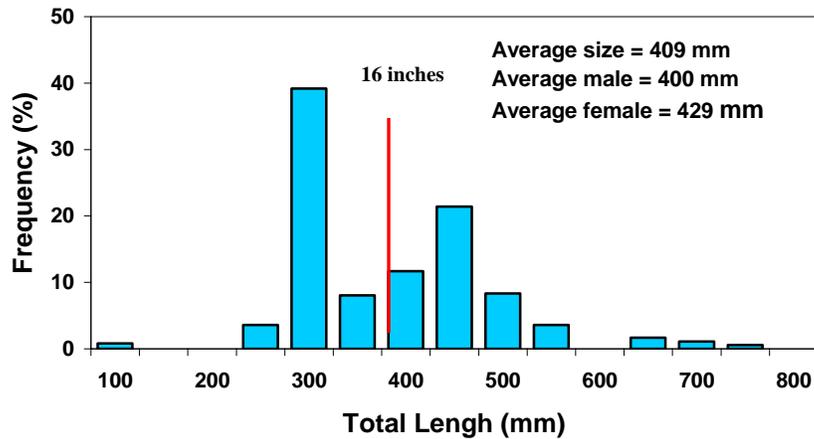
Relative Abundance Fish per Net



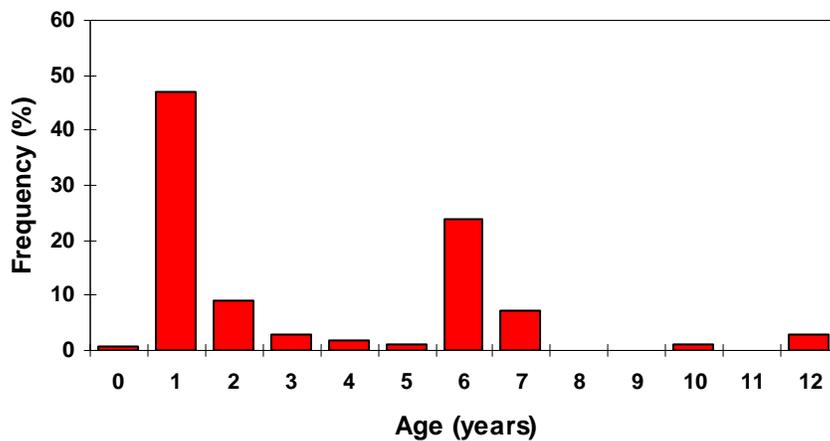
Relative abundance (average number of fish per net) of walleye in Scooteney Reservoir, Sprague Lake, Potholes Reservoir and Moses Lake is quite high when compared to the more oligotrophic Lake Roosevelt and Banks lakes. As with the relatively faster growth rates of walleye in Washington's productive waters, when compared to the Midwest and Canada, the average relative abundance in Washington lakes is also impressive. The decrease in catch rates in Potholes and Moses Lake from the high values 2002 is likely attributable to a slight change in sampling protocol. The values in 2003 and 2004 are nevertheless still quite high.

Sprague Lake

**Size Distribution
Sprague Lake, 2004**

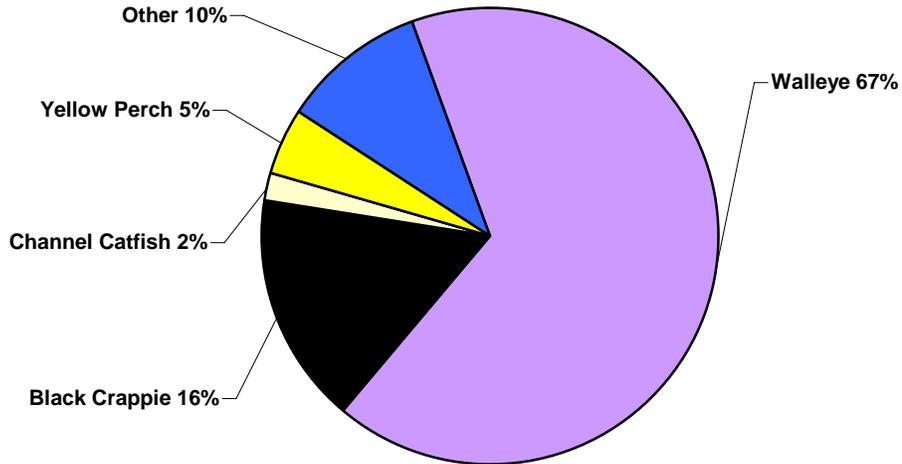


**Age Distribution
Sprague Lake, 2004**



The size distribution of walleye in Sprague Lake in 2004 shows a decent range of adult sizes. Looking at the age distribution graph, we can see that most of the fish captured in 2004 were one-year-olds. This indicates acceptable levels of spawning and recruitment into the population in 2003 and a strong year-class that should be of legal size for the 2005 fishing season. The only other two strong year-classes in the population (the six and seven-year-olds) will be falling out soon. It is normal for walleye to form strong year-classes as shown in Sprague, but it is difficult to predict when the next one will occur.

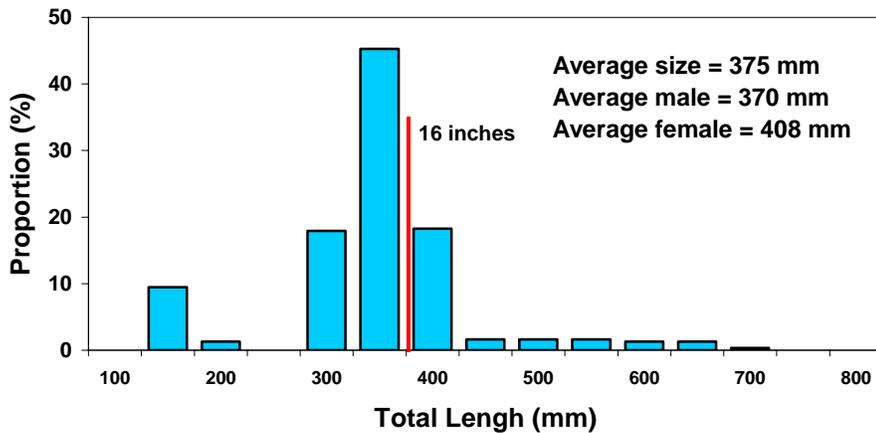
Species Composition Sprague Lake, 2004



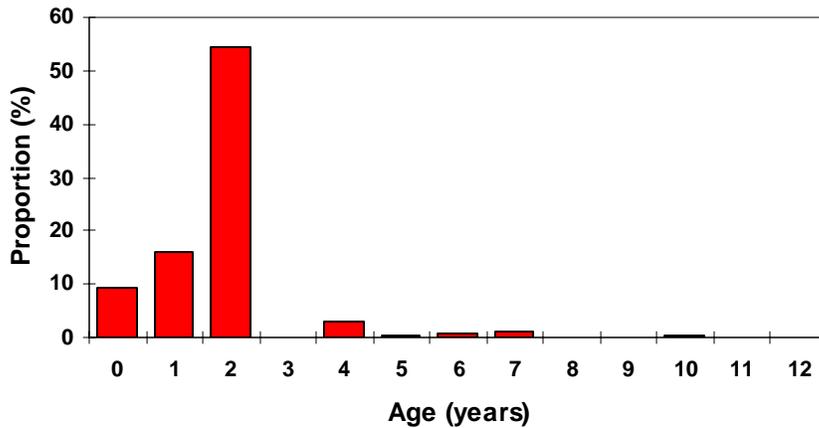
Sprague Lake offers good angling opportunities for species other than walleye. Although yellow perch and black crappie are not as abundant as in recent years, they are still present in relatively good numbers. The average size captured in our gillnets in 2004 was 17 inches (1.7 pounds) for walleye; seven inches for black crappie; 27.5 inches (almost 10 pounds) for channel catfish and 9.5 inches for yellow perch. Other species present in lower numbers include brown bullhead, bluegill, smallmouth bass, tench and common carp.

Scooteney Reservoir

Size Distribution Scooteney Reservoir, 2004

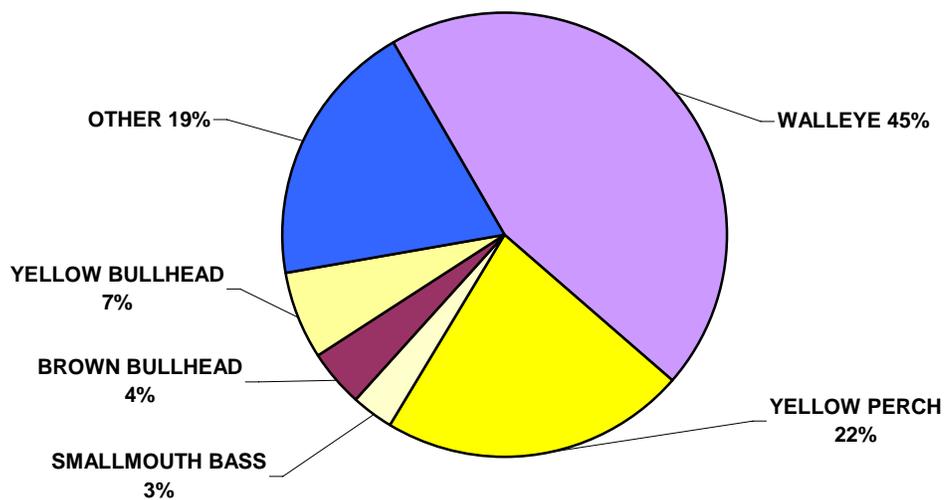


**Age Distribution
Scooteny Reservoir, 2004**



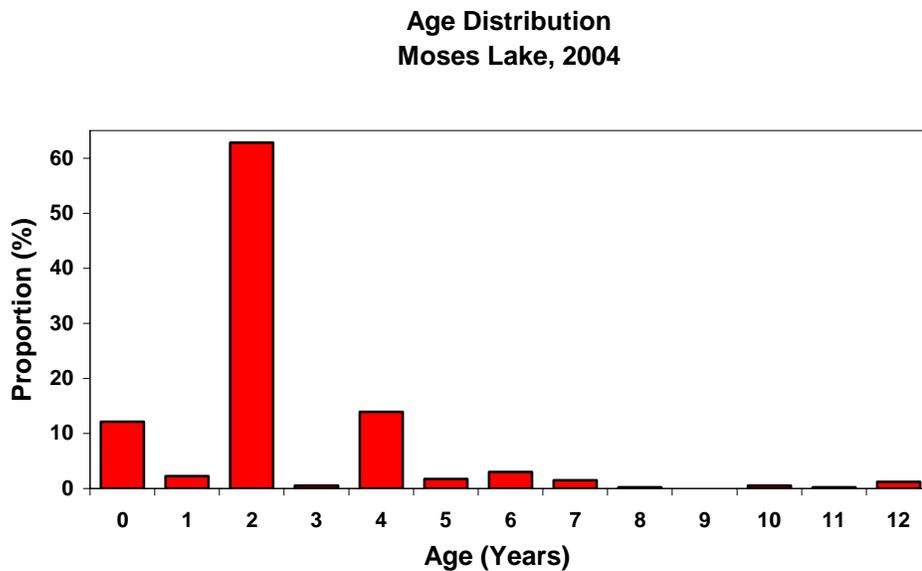
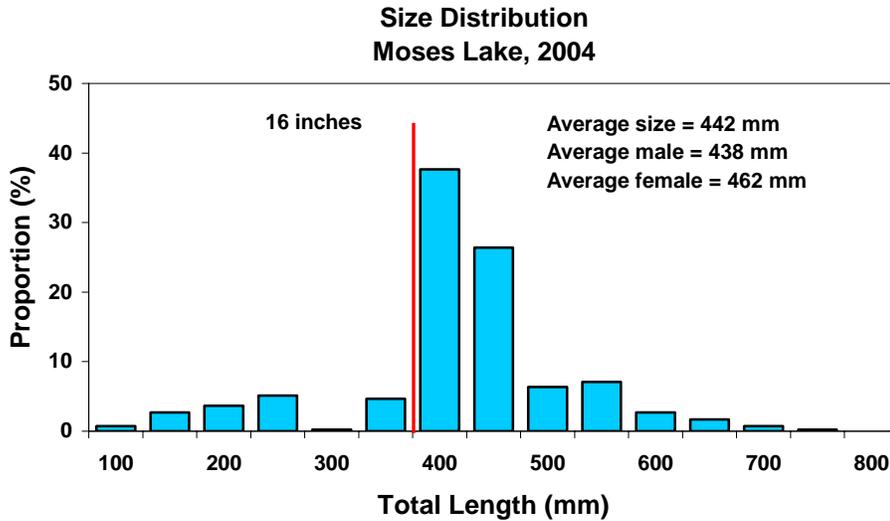
The size distribution of walleye in Scooteny Reservoir in 2004 shows a restricted range of adult sizes and not many were of legal size. Although we averaged over 25 walleye per gillnet set, fewer than 20% of the fish captured were over 16 inches. The number of incoming age classes indicates recruitment is not a problem even though there are low numbers of large females. Looking at the age distribution graph, we can see why there are so few larger adult fish; less than ten percent of the total catch were older than two years. The good news is that over 50% of the population is currently two-years-old and just under the legal size limit. This means that for the 2005 fishing season, there should be high numbers of legal size walleye to catch in Scooteny Reservoir.

**Species Composition
Scooteny Reservoir, 2004**

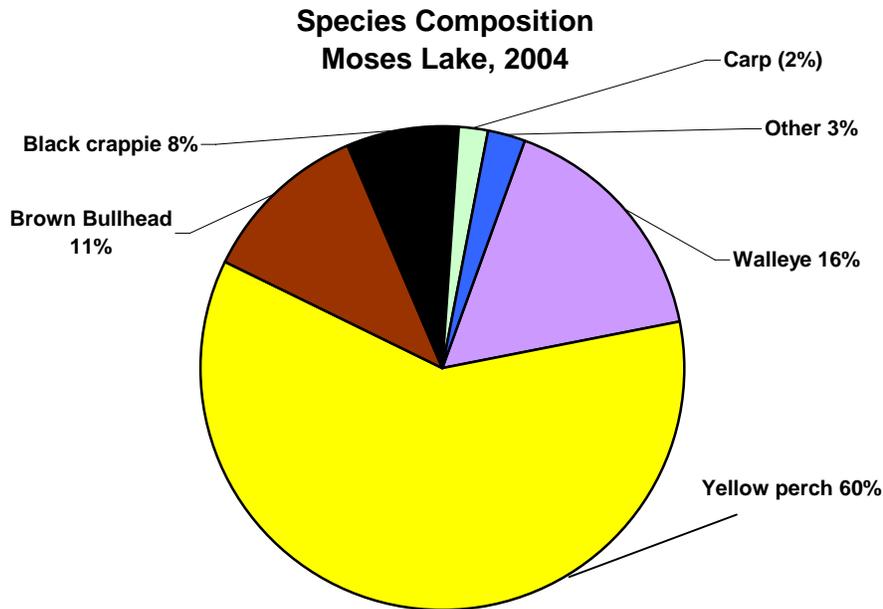


Scooteney Reservoir offers good angling opportunities for species other than walleye. Yellow perch are the second most abundant fish in the reservoir and averaged seven inches in length. They should be larger in 2005. Walleye averaged 15 inches (1.3 pounds); smallmouth bass averaged ten inches; both brown and yellow bullhead averaged ten inches. Other species present in lower numbers include channel catfish, black crappie, largemouth bass, lake whitefish, pumpkinseed sunfish, suckers and common carp.

Moses Lake



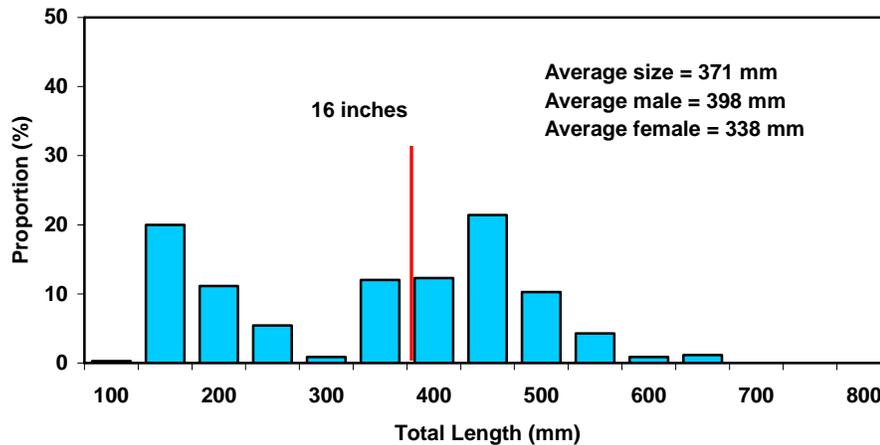
The size distribution of walleye in Moses Lake in 2004 shows a good range of adult sizes (83% of the population is over 16 inches). Looking at the age distribution graph, we can see that over 60% of the population was fast growing two-year-olds in 2004. Although there were very few zeros and ones, the two-year-old class should carry the population for a few more years until another strong year-class enters the population. Because the walleye in Moses Lake are so fast growing, the large two-year-old class helped give Moses Lake the largest average size in any of our FWIN lakes (almost 18 inches).



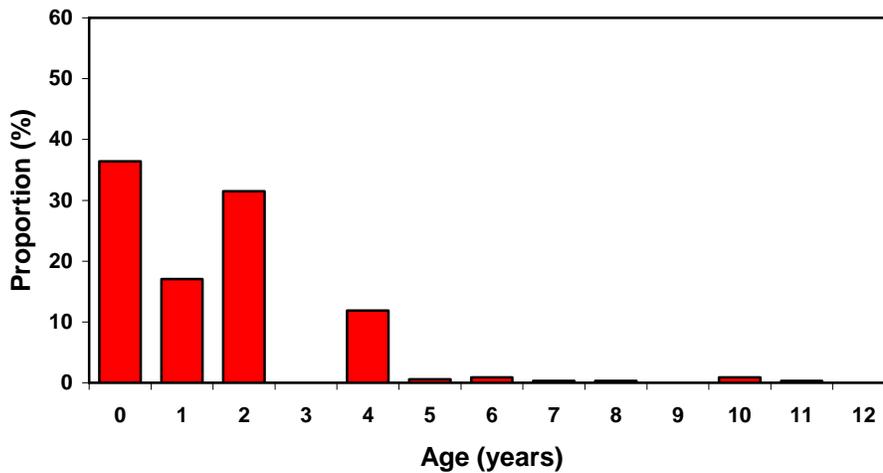
Moses Lake offers a variety of angling opportunities for species other than walleye. Yellow perch were far and away the most abundant fish in the reservoir, but averaged only five inches in length. Walleye averaged 18 inches and 2.2 pounds; brown bullhead averaged 11 inches and 0.6 pounds; black crappie averaged only five inches and carp were averaging 5 pounds. Other species present in lower numbers include bluegill, lake whitefish, suckers, largemouth and smallmouth bass and rainbow trout.

Potholes

**Size Distribution
Potholes Reservoir, 2004**

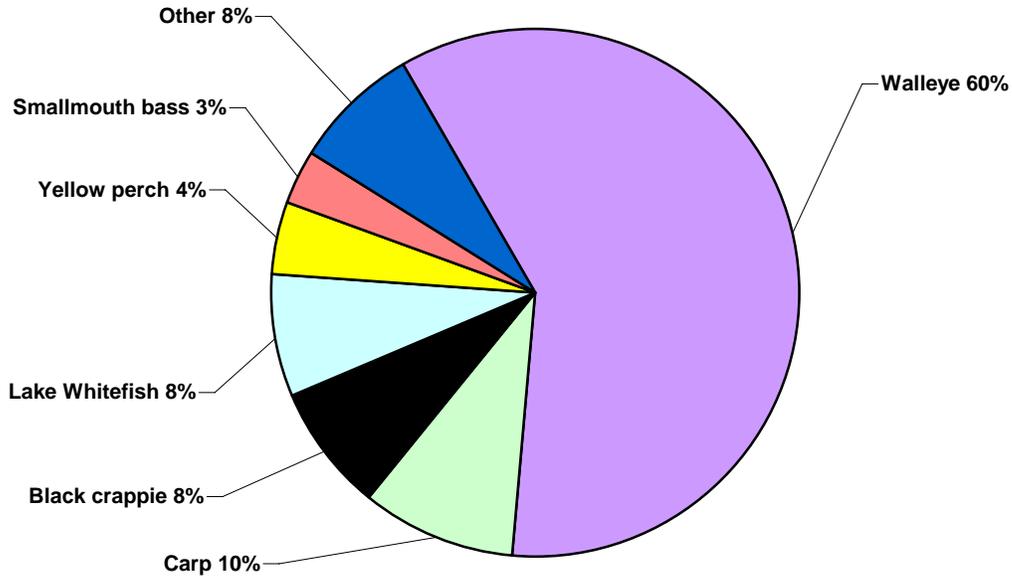


**Age Distribution
Potholes Reservoir, 2004**



Potholes Reservoir, like Moses Lake showed a very good range of legal sized walleye in 2004 (a 50:50 split of the population over and under 16 inches). Also like Moses Lake, there is a strong two-year-old age-class in addition to higher numbers of zero and ones. This should provide good fishing for the next few years. Although the relative abundance in Potholes has dropped the last two years this is likely due to a slight change in the sampling protocol on that lake only. The catch rate was still more than ten fish per net, which indicates high density.

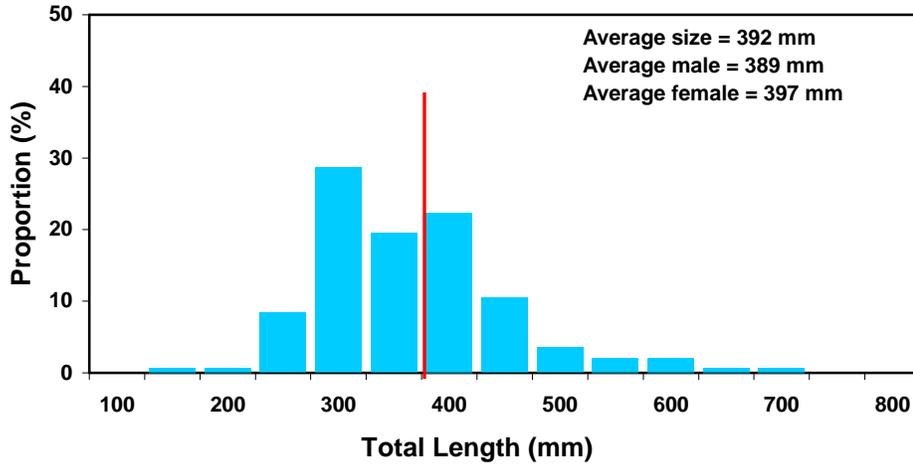
**Species Composition
Potholes Reservoir, 2004**



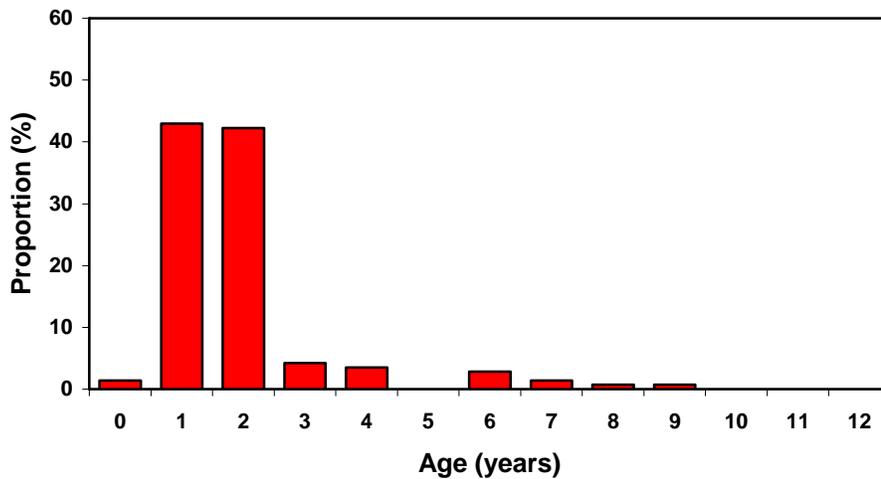
Potholes Reservoir is well known for its wide variety of sportfishing opportunities. Besides the walleye, which averaged 15 inches and 1.6 pounds, black crappie averaged eight inches, carp averaged seven pounds, lake whitefish averaged 22 inches and five pounds, yellow perch averaged six inches and smallmouth bass averaged 14 inches and 1.7 pounds each. Other species present in lower numbers include brown bullhead, bluegill, channel catfish, suckers, largemouth bass and rainbow trout.

Banks

**Size Distribution
Banks Lake, 2004**

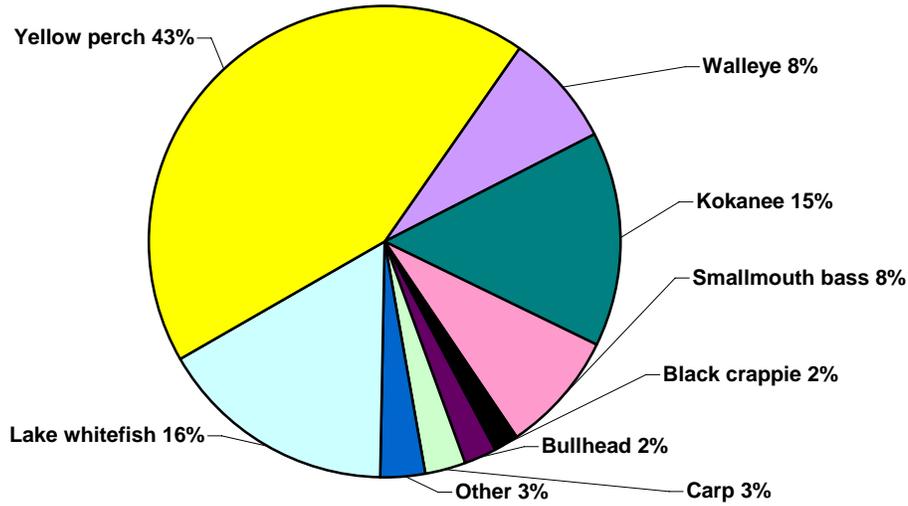


**Age Distribution
Banks Lake, 2004**



The size distribution of walleye in Banks Lake in 2004 shows a good range of sizes although only 41% of the population is over 16 inches. The good news, like some of the other waters, should be improved angling for walleye over the next few years. There are two very strong year-classes in Banks Lake now with almost no other age classes represented at all. Fortunately those two classes were one and two-years old in 2004 so as these fish grow, the average size should increase for the next couple years.

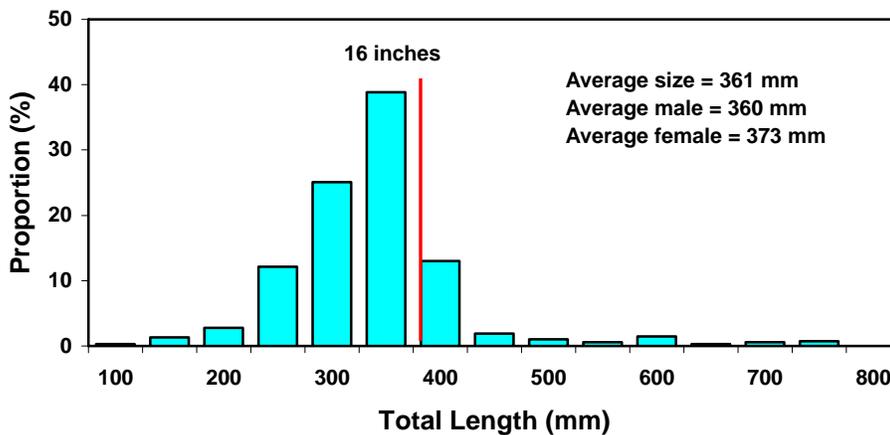
Species Composition Banks Lake, 2004



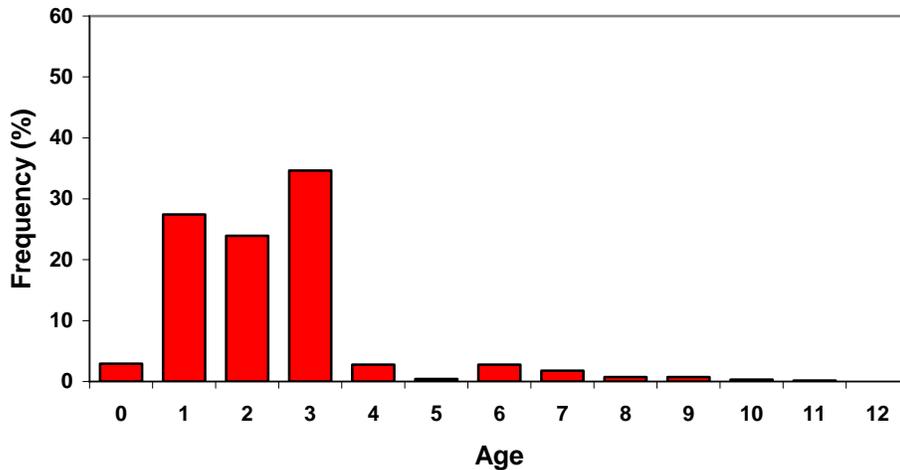
Banks Lake offers a large variety of angling opportunities for species other than walleye. Yellow perch were the most abundant fish in the reservoir and averaged eight inches in length. Walleye averaged 16 inches and 1.42 pounds; kokanee averaged 17 inches; smallmouth bass averaged 14 inches and 1.3 pounds; the relatively few black crappie averaged six inches in length; brown bullhead averaged ten inches; carp were averaging 5 pounds; and lake whitefish averaged 19 inches and 2.2 pounds. Other species present in lower numbers include largemouth bass, burbot, suckers, pumpkinseed sunfish and rainbow trout.

Lake Roosevelt

Size Distribution Lake Roosevelt, 2004

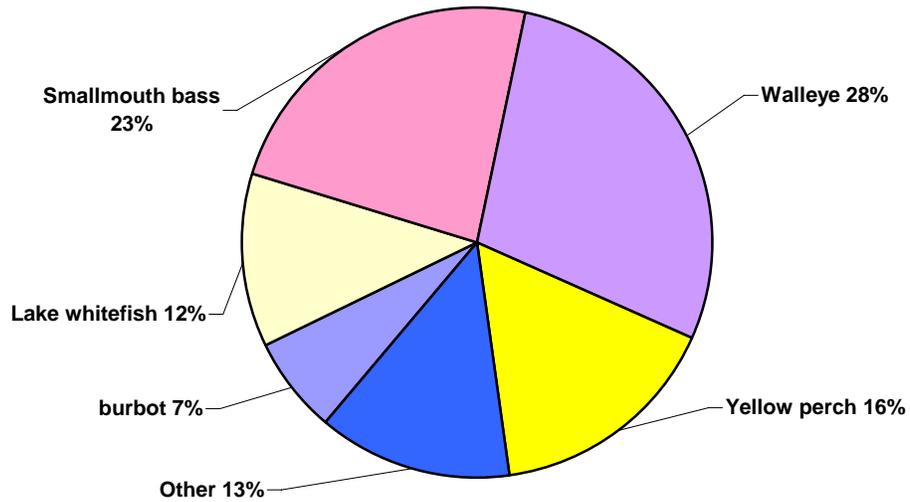


**Age Distribution for All Sections
Combined in Lake Roosevelt, 2004**



The size distribution of walleye in Lake Roosevelt in 2004 shows a restricted range of smaller sizes. Only 20% of the population was longer than 16 inches. Like the other lakes in the FWIN program though, Roosevelt has strong year-classes that will be filling in the larger size ranges in the next few years. The age distribution graph shows strong one, two and three-year-old classes. The phenomenon of walleye having strong year-classes in some years and almost nonexistent ones in others is not unique to Washington waters. It is a common characteristic of walleye populations everywhere. The cause for this cyclic trend does not seem to be localized either. During the same years we experience strong year-classes in Washington, the same thing is happening in the Midwest and across Canada so it seems to be dictated by environmental influences on a very large scale. Like our other waters, look for the average size of walleye in Lake Roosevelt to be on the increase for the next few years.

**Species Composition
Lake Roosevelt, 2004**



Lake Roosevelt, like the other lakes in this report, has more than walleye to fish for. Smallmouth bass are the second most abundant fish in the reservoir and averaged 11 inches and 0.8 pounds. Walleye averaged 15 inches and one pound. Yellow perch, although readily abundant, are somewhat stunted, like those in Moses Lake, and averaged only five inches. Lake whitefish averaged 20 inches and three and a half pounds. Burbot (also known as freshwater ling cod) averaged 19 inches and 1.4 pounds. Other species present in lower numbers include carp, kokanee, suckers, northern pikeminnow, peamouth and rainbow trout.